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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,598	04/15/2004	Yun-Bok Lee	053785-5179	6648

30827 7590 05/12/2006

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EXAMINER	
CHOWDHURY, TARIFUR RASHID	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/824,598	LEE, YUN-BOK	
	Examiner	Art Unit	
	Tarifur R. Chowdhury	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-9 and 11-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-9,11-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/03/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on January 03, 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al., (Matsumoto), USPAT 6,078,375 in view of Hirakata et al., (Hirakata), USPAT 5,977,562.

4. Matsumoto discloses (col. 4, lines 4 – 60) and shows in Figs. 2 and 3, an in-plane switching mode liquid crystal display device, comprising:

- first (101) and second (201) substrates facing and spaced apart from each other, wherein one of the first and second substrates is rubbed in one direction, which can be any direction;

- array elements including field-generating electrodes (103, 107) formed on the first substrate (101); and
- a liquid crystal layer (300) between the first substrate and the second substrate such that at least a portion of the liquid crystal is oriented in the one direction (Fig. 3),

FIG. 2

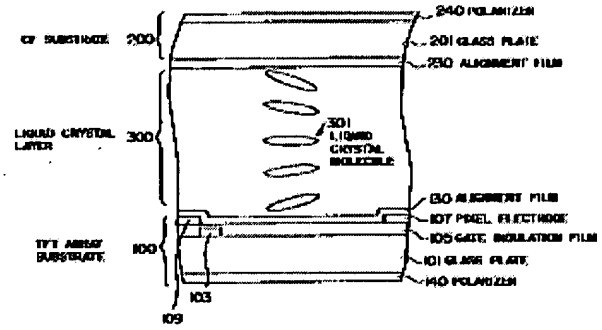
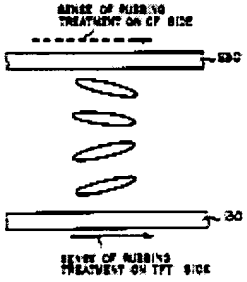


FIG. 3



wherein the first and second substrates have a rectangular shape having a long side and a short side, and the liquid crystal layer is oriented by the rubbing using a rubbing roll (well known to perform rubbing by using rubbing roll).

Matsumoto differs from the claimed invention because he does not explicitly disclose that the field-generating electrodes having a curved shape.

Hirakata discloses an in-plane switching mode liquid crystal display device having field-generating electrodes wherein the electrodes have curved shape and a space between the electrodes has a ring shape (Fig. 11). He also discloses that due to having curved shaped electrodes it is possible to produce uniform electric field between the electrodes (col. 9, lines 51-55).

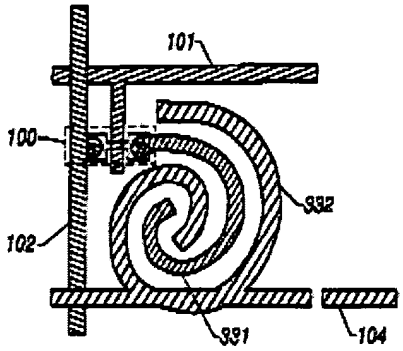


FIG. 11

Hirakata is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use curved shape electrodes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use curved shape field-generating electrodes in the device of Matsumoto for the advantage of producing uniform electric field between the electrodes, as per the teachings of Hirakata.

Still lacking is the limitation such as the rubbing roll has a length corresponding to the short side of the substrate. However, it is notoriously well known in the art to use rubbing roll having a length corresponding to the short side of the substrate for several advantages such as to reduce manufacturing time, cost and increase production efficiency and thus would have been obvious.

Accordingly, as per claims 3 and 8, since the method of fabricating the display device merely discloses the steps of forming each element and since each element must be formed to make the device, the method would have at least been obvious in view of the device.

As to claim 5, Matsumoto also shows in Fig. 6, that the array elements include a gate line (102), a data line (109) crossing the gate line and a thin film transistor (TFT) connected to the gate line and the data line.

As to claims 4 and 6, it is clear from Fig. 3 of Matsumoto that the rubbing direction is parallel to the long side of the substrates and forms an angle with respect to the gate line (Fig. 6).

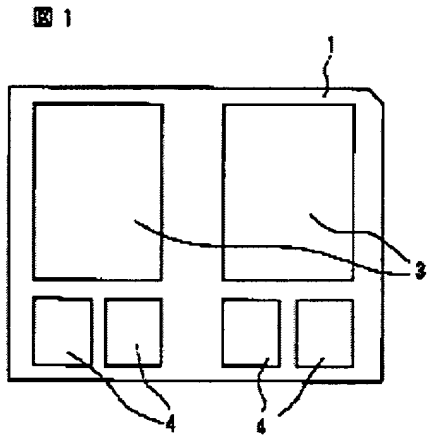
As to claim 9, Matsumoto also discloses that the second substrate (201) includes a color filter.

5. Claims 7-12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto in view of Hirakata and further in view of Hakoda et al., (Hakoda), JP 09-325328.

6. Matsumoto when modified by Hirakata differs from the claimed invention because they do not explicitly disclose that the first and second substrates include first and second cell regions having sizes different from each other and a dummy region, a plurality of first liquid crystal cells are formed in the first cell region and a plurality of second liquid crystal cells are formed in the second cell region such that the plurality of first liquid crystal cells and the plurality of second liquid crystal cells have a rectangular shape, wherein a longer side of each first liquid crystal cell is parallel to a first direction and a longer side of each second liquid crystal cell is parallel to one of the first direction and a second direction perpendicular to the first direction.

Hakoda discloses a liquid crystal display device having first and second substrates including first and second cell regions with sizes different from each other

and a dummy region (region where the panels are not formed), a plurality of first liquid crystal cells are formed in the first cell region and a plurality of second liquid crystal cells are formed in the second cell region such that the plurality of first liquid crystal cells and the plurality of second liquid crystal cells have a rectangular shape, wherein a longer side of each first liquid crystal cell is parallel to a first direction and a longer side of each second liquid crystal cell is parallel to one of the first direction and a second direction perpendicular to the first direction (Fig. 1). Hakoda also discloses that by forming such panel patterns it is possible to reduce manufacturing cost (abstract).



Hakoda is evidence that ordinary workers in the art would find a reason, suggestion or motivation to have panel patterns of varying sized plural liquid crystal display device panels.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Matsumoto when modified by Hirakata by forming a plurality of first liquid crystal cells in the first cell region and a plurality of second liquid crystal cells in the second cell region such that

the plurality of first liquid crystal cells and the plurality of second liquid crystal cells have a rectangular shape, wherein a longer side of each first liquid crystal cell is parallel to a first direction and a longer side of each second liquid crystal cell is parallel to one of the first direction and a second direction perpendicular to the first direction and a dummy region for the advantage of reduced manufacturing cost.

Accordingly, claims 7, 15 and 16 would have been obvious.

As to claim 11, Matsumoto also shows in Fig. 6, that the array elements include a gate line (102), a data line (109) crossing the gate line and a thin film transistor (TFT) connected to the gate line and the data line.

As to claim 12, it is clear from Fig. 3 of Matsumoto that the rubbing direction is parallel to the long side of the substrates and forms an angle with respect to the gate line (Fig. 6).

As to claim 17, Matsumoto also discloses that the second substrate (201) includes a color filter.

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Hirakata and Hakoda and further in view of Leenhouts et al., (Leenhouts), USPAT 4,609,255.

8. Even though Matsumoto discloses the use of first and second polarizers (140, 240), Matsumoto when modified by Hirakata and Hakoda differ from the claimed invention because they do not explicitly disclose that a first polarization axis of the first polarizer is perpendicular to the one orientation direction and a second polarization axis of the second polarizer is parallel to the one orientation direction.

Leenhouts discloses a liquid crystal display device including a front polarizer and a back polarizer. He further discloses that the polarization direction of the front polarizer runs parallel to one orientation direction and the polarization direction of the back polarizer is perpendicular to one orientation direction. He also discloses that such an arrangement improves contrast ratio (col. 2, lines 27-43).

Leenhouts is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use polarizers wherein a first polarization axis of a first polarizer is perpendicular to the one orientation direction and a second polarization axis of the second polarizer is parallel to the one orientation direction.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of the Matsumoto when modified by Hirakata and Hakoda such that a first polarization axis of the first polarizer is perpendicular to the one orientation direction and a second polarization axis of the second polarizer is parallel to the one orientation direction for advantages such as improved contrast ratio.

Accordingly, claims 13 and 14 would have been obvious.

Conclusion

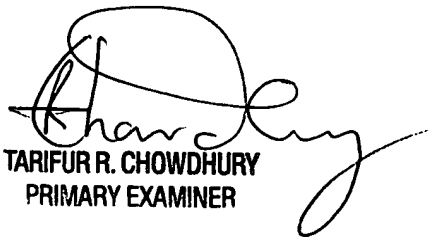
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
May 10, 2006



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER